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TOLMACHEV, A.I.

Autochthonous nucleus of the Arctic flora and its relation to the alpine floras of northern and Central Asia. Probl. bot. 6:55-65 '62. (MIRA 16:5)
(Arctic regions—Paleobotany, Stratigraphic)

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VOROB'YEV, Dmitriy Petrovich; TOLMACHEV, A.I., otv. red.;
SOROKINA, V.A., tekhn.red.

[Vegetation of the Kurile Islands] Rastitel'nost' Kuril'skikh ostrovov. Moskva, Izd-vo AN SSSR, 1963. 91 p. (MIRA 16:12)

(Kurile Islands--Botany)

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SUKACHEV, V.N., akademik, glav. red.; VASIL'YEV, V.N., otv. red.; TOLMACHEV, A.I., otv. red.

[Materials on the history of the flora and vegetation of the U.S.S.R.] Materialy po istorii flory i rastitel'nosti SSSR. Moskva, Izd-vo AN SSSR. No.4. 1963. 587 p. (MIRA 17:4)

1. Akademiya nauk SSSR. Botanicheskiy institut.

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TOLMACHEV, A.I.; YURTSEV, B.A.

Ranunulus Crayi Britton(R. pedatifidus Hook., non Smith) and its distribution in northeastern Asia. Bot.mat.Gerb. 22:112-117 '63.
(MIRA 17:2)

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TOLMACHEV, Aleksandr Innokent'yevich; TIKHOMIROV, B.A., prof., doktor biol. nauk, otv. red.; MARKOVSKAYA, L.A., red. izd-va; ZAMARAYEVA, R.A., tekhn. red.

[Arctic flora of the U.S.S.R.; critical survey of vascular plants met in the Arctic regions of the U.S.S.R.] Arkticheskaia flora SSSR; kriticheskii obzor sosudistykh rastenii, vstrechaiushchikhsia v Arkticheskikh raionakh SSSR. Moskva, Izd-vo AN SSSR. No.4.[Families Lemnaceae - Orchidaceae] Semeistva Lemnaceae - Orchidaceae. 1963. 95 p.
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TIKHOMIROV, Boris Anatol'yevich; TOLMACHEV, A.I., otv. red.; BELKINA, M.A., red.izd-va; AREF'YEVA, G.P., tekhn. red.

[Essays of the biology of plants in the Arctic] Ocherki po biologii rastenii Arktiki. Moskva, Izd-vo AN SSSR, 1963. 152 p. (MIRA 16:9)

(Arctic regions--Botany--Ecology)

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TOIMACHEV, A.I., otv. red.; KIRIKOVA, L.A., red.

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TAKHTADZHYAN, A.L.; TOLMACHEV, A.I.; FEDOROV, An.A.

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(MIRA 18:12)

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TOLMACHEV, A.I., doktor biolog.nauk

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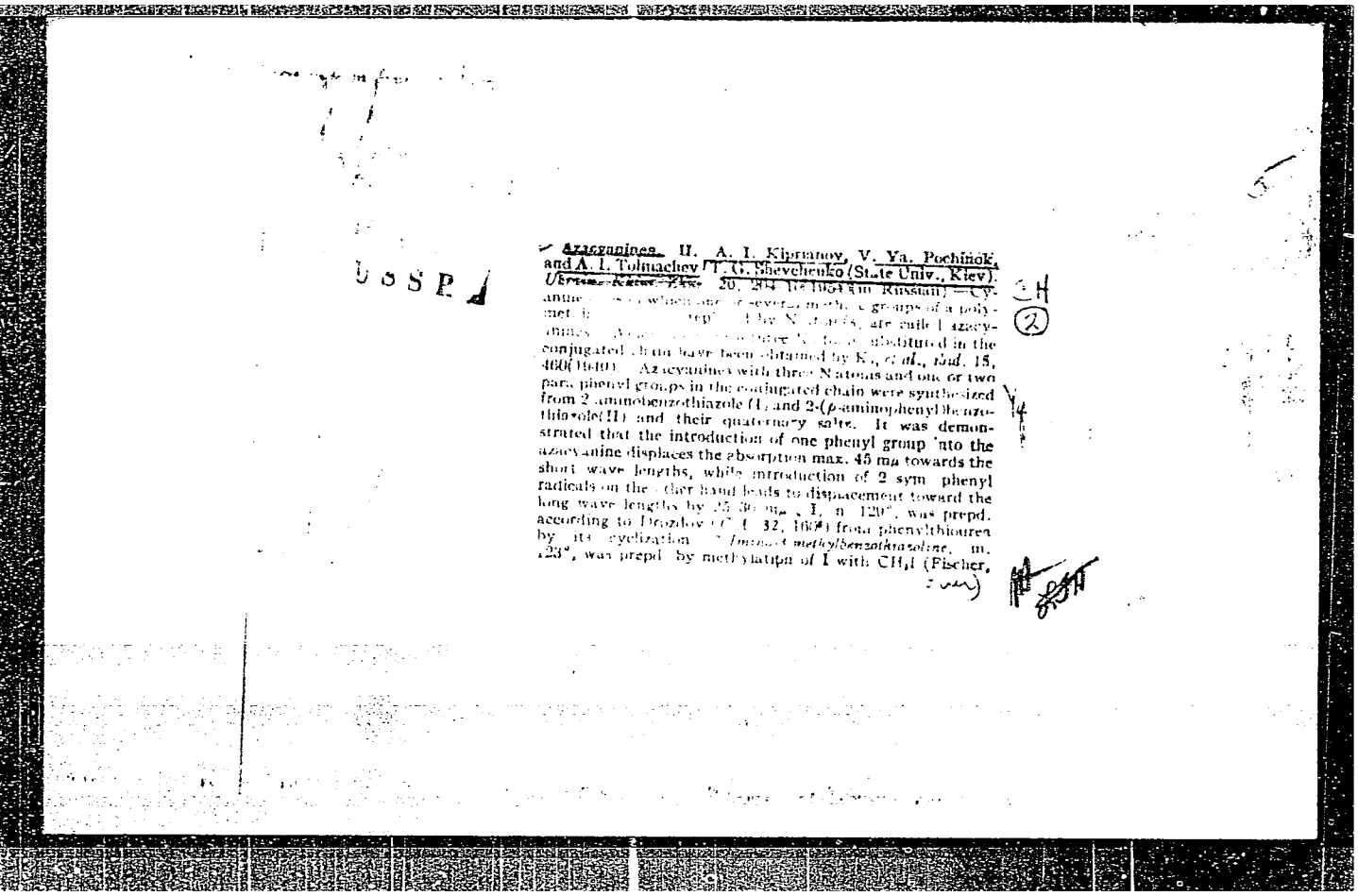

USSR

Azacyanines. II. A. I. Kiprianov, V. Ya. Pochinok, and A. I. Tolmachev. T. G. Shevchenko (State Univ., Kiev). *Ukrain. Khim. Zhur.* 20, 204–16 (1954) (in Russian). (Cyanine [illegible] which one or several methine groups of a polymethine [illegible] rep[illegible] by N atoms, are called azacyanines. [illegible] substituted in the conjugated chain have been obtained by K., *et al.*, *Ind.* 15, 400(1940). Azacyanines with three N atoms and one or two para-phenyl groups in the conjugated chain were synthesized from 2-aminobenzothiazole (I) and 2-(*p*-aminophenyl)benzothiazole (II) and their quaternary salts. It was demonstrated that the introduction of one phenyl group into the azacyanine displaces the absorption max. 45 mμ towards the short wave lengths, while introduction of 2 sym. phenyl radicals on the other hand leads to displacement toward the long wave lengths by 25–30 mμ. I, m. 120°, was prepd. according to Brooker (*C.* I. 32, 1663) from phenylthiourea by its cyclization to *2-mercapto-methylbenzothiazoline*, m. 123°, was prepd. by methylation of I with CH_3I (Fischer,

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a 3 Experiments

Ann. 212, 330(1882); Hugershoff, Ber. 36, 3135(1903)]. *2-(p-Nitrophenyl)benzothiazole* (III), m. 231°, was prepd. by adding 16 g. *p*-nitrobenzoyl chloride in 60 ml. benzene to 10 g. aminothiophenol in 30 ml. dry benzene, the ppted. HCl salt of III being converted to free base with HCl, filtered, washed, and dried. The yield was 18 g. or 92% (Hugerhoff and Abell, C. A. 10, 2005). The product was not recrystd. for reduction to the amine. II, m. 165, was prepd. in 75% yield from III by Sn + HCl reduction; (cf. B. and S., *loc. cit.*). 1,3-Bis(2-benzothiazolyl)triazene, m. 247-50°, was obtained in up to 50% yield by adding 5 g. I, dissolved in 25 ml. glacial HOAc at 5°, slowly to nitrosylsulfuric acid (2.5 g. $NaNO_2$ in 5 ml. conc. H_2SO_4) cooled to 0°, keeping the temp. below 10° and then at room temp. for 30 min., filtering, and adding the nitrate to a cooled water-ale. soln. of 2 g. I and 50 g. cryst. NaOAc, whereupon the yell. ppt. which formed turned brownish upon standing. The mixt. was dild. with 300 ml. H_2O, the ppt. filtered off, washed with dil. HCl and H_2O, and dried; yield up to 50%. The crude triazene could not be completely purified from resinous impurities, recrystn. from glacial HOAc was presumably only after a hot wash (80°) with nitrobenzene. 1,3-Bis(2-benzothiazolyl)triazene is yellow; absorption max. at 440 mμ; poorly sol. in alc., ether, benzene, sol. when heated in glacial HOAc; heated in conc. HCl changing from yellow to red; yellow color in strong H_2SO_4, turning red upon dilution with H_2O, and on further dilution turning yellow again. HCl salt was prepd. by passing dry HCl through an ether suspension, decomps. temp. 195-200°, insol. in benzene and ether, decompd. by H_2O, absorption max. in MeOH contg.

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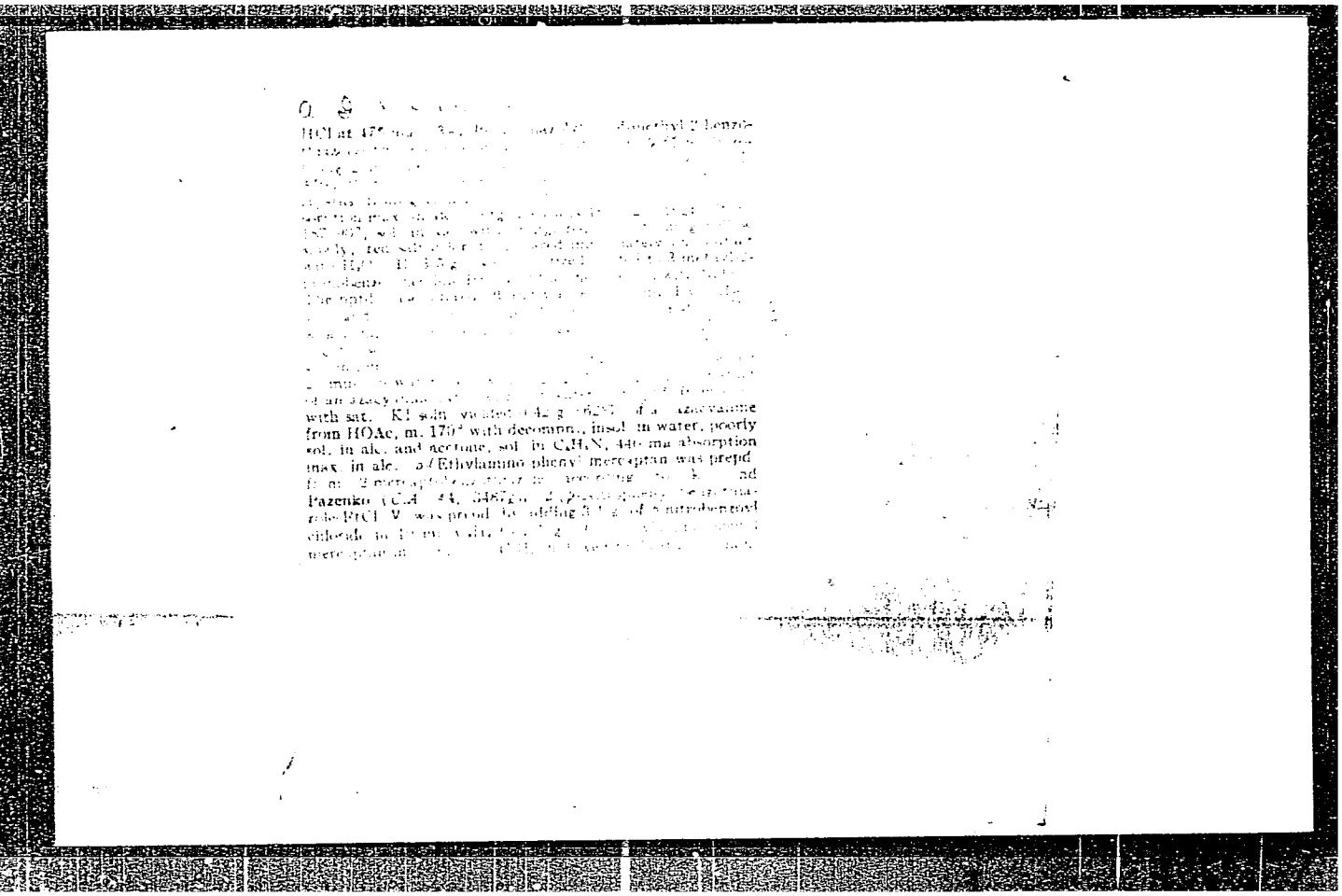

with sat. KI soln. yielded ... from HOAc, m. 170° with decompn., insol. in water, poorly sol. in alc. and acetone, sol. in C_5H_5N, 440 mμ absorption inact. in alc. ... Ethylamino phenyl mercaptan was prepd. ... Pazenko (C.A. 44, 3487) ... with PtCl IV was proved by adding ... nitrobenzoyl ... refluxed in ... were ...

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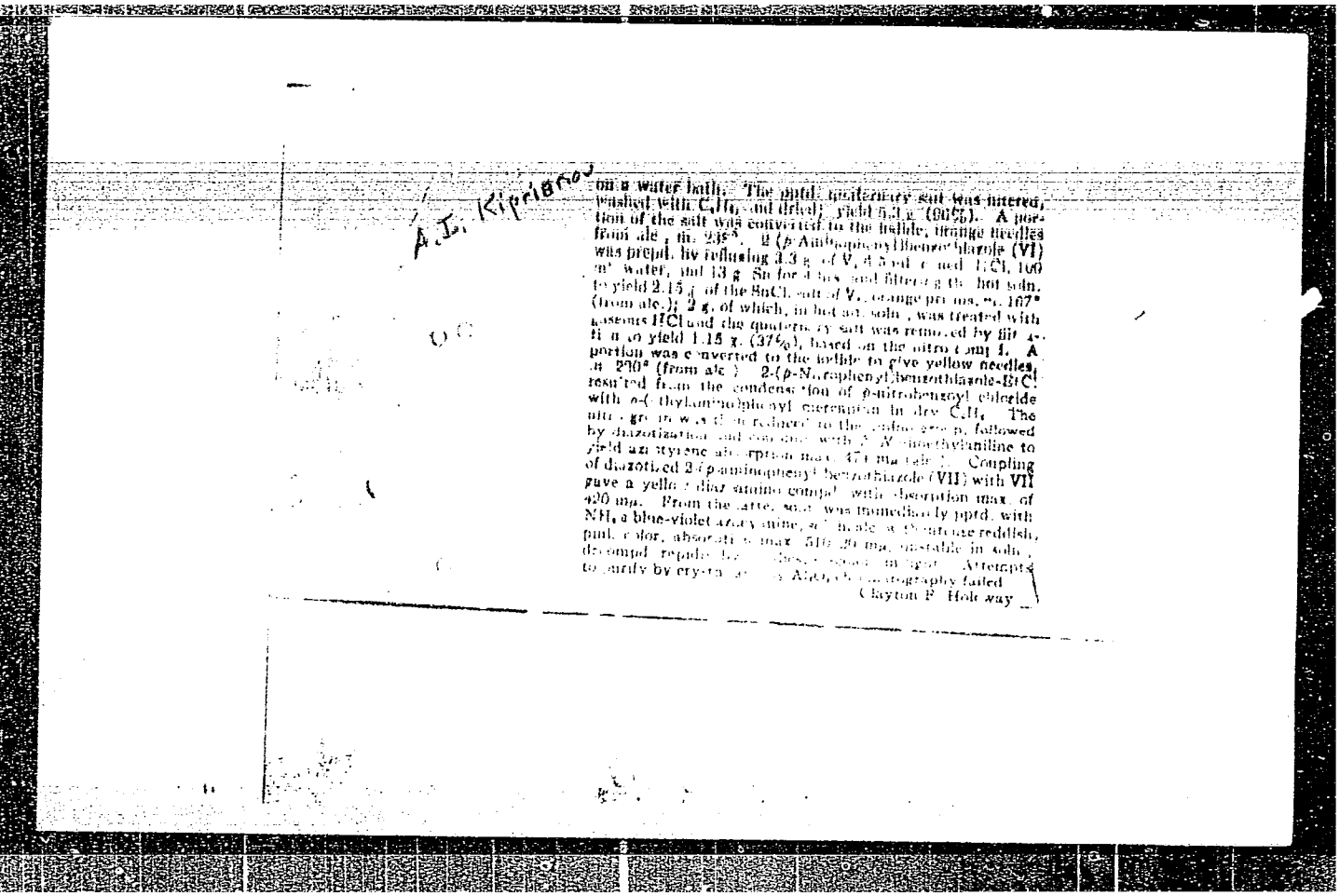

on a water bath. The ppted. quaternary salt was filtered, washed with C_6H_6, and dried; yield 5.3 g. (90%). A portion of the salt was converted to the iodide, orange needles from alc., m. 235°. 2 (*p*-Aminophenyl)benzothiazole (VI) was prepd. by refluxing 3.3 g. of V, 4.5 ml. of concd. HCl, 100 ml. water, and 13 g. Sn for 4 hrs. and filtering the hot soln. to yield 2.15 g. of the $SnCl_2$ salt of V., orange prisms, m. 167° (from alc.); 2 g. of which, in hot aq. soln., was treated with excess HCl and the quaternary salt was removed by filtration to yield 1.15 g. (37%), based on the nitro comp'd. A portion was converted to the iodide to give yellow needles, m. 290° (from alc.). 2-(*p*-N,N-Diphenylaminophenyl)benzothiazole-EtCl resin'd from the condensation of *p*-nitrobenzoyl chloride with *o*-(diphenylamino)phenyl ether in dry C_6H_6. The nitro group was then reduced to the amino group, followed by diazotization and coupling with *N*,*N*-dimethylaniline to yield an azo dye, λmax. 470 mμ (alc.). Coupling of diazotized 2-(*p*-aminophenyl)benzothiazole (VII) with VII gave a yellow diazoamino compd. with absorption max. at 420 mμ. From the latter, VII was immediately ppted. with NH_4 a blue-violet azo dye, which in alc. soln. is a deep reddish-purple color, absorption max. 510–20 mμ, unstable in soln., decompd. rapidly by [illegible] in light. Attempts to purify by crystn. and Al$_2$O$_3$ chromatography failed.

Clayton P. Holloway

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TOLMACHEV, A.I.

The reaction of triazeno alcohols with acids. V. Ya. Pochinok, A. I. Tolmachev, and A. P. Pishchenko (Kiev State Univ.). *Zhur. Obshchei Khim.* 26, 232–8 (1956) (in Russian); cf. *C.A.* 41, 3066*f*.—Treating MeCPh(OH)-$CH_2N{:}NNHPh$ (I) with aq. H_2SO_4 and with AcOH, EtCO$_2$H, or BzOH in abs. Et_2O led in each case to the decompn. of the alc. to $MeCOCH_2Ph$ (II), $PhNH_2$, and N. I and β-naphthol in dry C_6H_6 gave, in addn. to II, *1-(β-naphthoxy)-2-hexyl-2-propanol*, colorless leaflets, m. 73°, sol. in Et_2O, Me_2CO, petr. ether, and hot EtOH, insol. in H_2O. I was decompd. within 1 hr. when boiled in toluene, but did not decomp. when boiled 30 hrs. in Et_2O or C_6H_6. The following new triaz. to alcs. behaved similarly: *p-MeC$_6$H$_4$-CMe(OH)CH$_2$N:NNHC$_6$H$_4$Me-p* (III), m. 96–7° (from ligroine); the *di(o-tolyl) isomer* of III, yellow oil (did not cryst. on cooling); the *bis-p-MeOC$_6$H$_4$ analog*, $C_{18}H_{22}N_2O_2$, of III, colorless crystals, m. 160–1° (from C_6H_6); (*p-MeC$_6$H$_4$)$_2$C(OH)CH$_2$N:NNHC$_6$H$_4$Me-p*, colorless crystals, m. 145–7° (from ligroine). Gary Gerard

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TOLMACHEV, A. I.

TOLMACHEV, A. I. --"Obtaining Quaternary Salts of Weak Organic Bases." Kiev, 1955. (Dissertation for the Degree of Candidate in Chemical Sciences.)

So.: Knizhnaya Letopis', No 7, 1956.

Inst. Organic Chem.
Acad. Sci. UkSSR
Kiev

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TOLMACHEV, A.I.

466

AUTHORS: Kiprianov, A. I., and Tolmachev, A. I.

TITLE: Derivation of Quaternary Salts of Weak Organic Bases (Polucheniye chetvertichnykh soley slabykh organicheskikh osnovaniy)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 142-150 (U.S.S.R.)

ABSTRACT: Kinetic investigation was conducted with 2-methylbenzthiazole as a base to compare the rates of formation of quaternary salts of one and the same base with the application of well-known alkylating agents as well as esters of various nitrobenzosulfonic acids. The reaction was carried out at temperatures of 70, 80, 90 and 100° and the rate of reaction was determined by the weight of the quaternary salt separated from the solution. The rate constants calculated in accordance with the bimolecular reaction equation have shown perfect agreement. Results given in Table 1 show that methyl ether of m-nitrobenzenesulfonic acid by its methylating potential at 80° is equal to dimethylsulfate and is 70 times more active than methyl iodide. Methyl ether of o-nitrobenzenesulfonic acid was found to be approximately 6 times and methyl ethers of 2, 3- and 2,4-dinitrobenzenesulfonic acids 60 times more active than dimethyl sulfate which is considered the most potent of the alkylating

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agents used. The increase in the rate of formation of quaternary salts in the case of nitro-derivatives of benzene sulfo-acids is explained by the reduction in activation energy and sometimes also by the increase in the pre-exponential factor. It is evident therefrom that the nitro-group in ortho-position does not produce any steric hindrance in the methylation reaction. According to N. A. Menshutkin (8) the rate of formation of quaternary salts during the reaction of tertiary amines with methyl iodide increases very sharply during the conversion from less polar to more polar solvents. It appears however that the polarity of the solvent in the case of esters of benzenesulfonic acids has a comparatively slight effect on the rate of reaction.
Six tables and 3 graphs. There are 15 references, of which 5 are Slavic.

ASSOCIATION: Academy of Sciences Ukrainian SSR, Institute of Organic Chemistry (Institut Organicheskoy Khimii, Akademii Nauk Ukrainskoy SSR)

PRESENTED BY:

SUBMITTED: January 18, 1956

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TOLMACHEV, A I

79-2-46/58

AUTHORS: Kiprianov, A. I. and Tolmachev, A. I.

TITLE: Dinitrobenzenesulfonic Acids and Their Esters (Dinitrobenzolsul'fokisloty i Ikh Efiry)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27, No 2, pp. 486-491 (U.S.S.R.)

ABSTRACT: This article describes the synthesis of 2,3-, 2,5- and 3,4-dinitrobenzenesulfonic acids, their esters and other derivatives as well as several new esters of already known nitro- and dinitrobenzenesulfonic acids. Table 1 lists a number of derivatives of three new dinitrobenzenesulfonic acids obtained for the purpose of identification, with their melting points and analyses. The authors, together with L. M. Yagupol'skiy (9), also obtained a hitherto unknown 2-nitro-4-trifluoromethylbenzenesulfonic acid. Under the effect of alkaline agents, the dinitrobenzenesulfonic acids may separate the sulfo-group (2,4-dinitrobenzenesulfonic acid) or the nitro group (2,3-, 2,5- and 3,4-dinitrobenzenesulfonic acid). It is recommended that the reaction with dinitrobenzenesulfochlorides be carried out at a temperature of about 5° and the amount of alcoholate added to the acid chloride solution must be exactly equivalent to the sulfochloride. It was

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determined that the most reliable method for the derivation of esters of dinitrobenzenesulfonic acids is the reaction of their silver salts with alkly iodide. The hitherto unknown esters of nitro- and dinitrobenzenesulfonic acids, their melting points and chemical analyses are listed in table 2. The o-nitrobenzenesulfonic acid esters obtained during the reaction of o-nitrobenzenesulfochlorides with n-propyl or n-octyl alcoholates in dry ether are described as oils which do not submit to crystallization or distillation without decomposition.

2 tables. There are 15 references, of which 2 are Slavic

ASSOCIATION: Academy of Sciences Ukr-SSR, Institute of Organic Chimistry

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SUBMITTED: January 18, 1956

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3(5) SOV/79-29-9-14/76

AUTHORS: Kiprianov, A. I., Tolmachev, A. I.

TITLE: Tertiary Oxonium Salts of Chromones and Thiochromones

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 2868-2874 (USSR)

ABSTRACT: It may be observed from the investigation made by various foreign chemists, as cited by references 1-4, that tertiary oxonium salts of γ-pyrone and its derivatives are difficult to produce; this is the reason why they have been so little investigated. The properties of these salts reveal, however, that they are highly reactive, and may serve as initial products for a number of different transformations (Refs 2, 3, 5). Thus, for instance, methyl perchlorate of dimethyl pyrone may enter autocondensation in the presence of bases, and under formation of an orange dye (IV) (Scheme 2), what is indicative of the activity of methoxy groups with respect to nucleophilic-, and of the activity of methyl groups with respect to electrophilic compounds. A more comprehensive investigation of properties and reactions of tertiary oxonium salts of pyrones, and especially chromones, however, calls for a more expedient method of synthesizing these products. A synthesis, recently made by the authors (Ref 6), of quaternary salts of

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weak organic bases, was successfully applied to chromone and its derivatives. On heating an equimolecular mixture of chromone and methyl ester of 2,4-dinitrobenzosulfonic acid at 50°, tertiary oxonium salt (V) is already quantitatively formed after 20 min. Isomeric benzochromones with methyl ester of o-nitrobenzosulfonic acid more readily form tertiary oxonium salts (VI) and (VII) than does chromone (90% and 95% yield). The tertiary oxonium salts of flavone (VIII), 1-thiochromone (IX), 4-thiochromone (X), and 2-methylchromone (XI) were obtained in the same manner. The synthesis of the tertiary salt of 2-methyl chromone (XI) proceeded with more difficulty. It was obtained only with methyl ester of 2,4-dinitrobenzene sulfonic acid in a yield of 81%. Xanthone, thioxanthone, xanthione, thioxanthione and isoflavone do not react with the methyl ester of this acid. All the new synthesized tertiary salts are colorless, crystalline compounds with high melting points. Their purification was rather difficult, as they are unstable to water and alcohol. There are 31 references, 5 of which are Soviet.

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Tertiary Oxonium Salts of Chromones and Thiochromones

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR (Institute of Organic Chemistry of the Academy of Sciences of the Ukrainskaya SSR)

SUBMITTED: September 1, 1958

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5.3610

77909
SOV/79-30-2-60/78

AUTHORS: Kipryanov, A. I., Tolmachev, A. I.

TITLE: Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 638-646 (USSR)

ABSTRACT: In their previous study (this j., 1959, our abstract 75199) the authors reported the synthesis of tertiary oxonium salts of chromones and thiochromones in the reaction of these weak bases with esters of nitrobenzenesulfonic acid. The present study deals with the condensation of these salts with quaternary salts of 2-methylbenzothiazole and its derivatives, or with 2-methylenebenzothiazole, which yielded a series of asymmetric dyes (momomethinylcyanines) containing benzothiazole- and benzopyrylium-groups. Equimolecular amounts of o-nitrobenzenesulfonate of 4-methoxybenzothiopyrylium and methylbenzenesulfonate of

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Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

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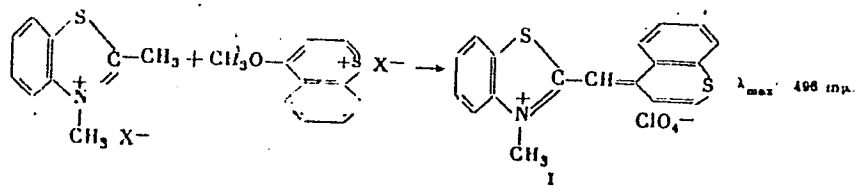
2-methylbenzothiazole heated for 30 min at 100 ° C in a mixture of acetic acid, acetic anhydride, and pyridine gave readily (I) dark-red needles; yield 20%, decomp. 264 ° C.



Dye I was obtained in 61% yield when 3-methyl-2-methylenebenzothiazoline was substituted for the quaternary salt of 2-methylbenzothiazole. Dyes (II) (orange needles; yield 60%; decomp. 278 ° C) and (III) (orange needles; yield 37%; decomp. 277 ° C) were obtained similarly from o-nitrobenzenesulfonate of

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Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

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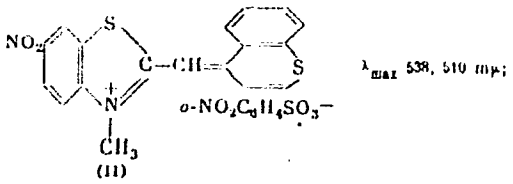
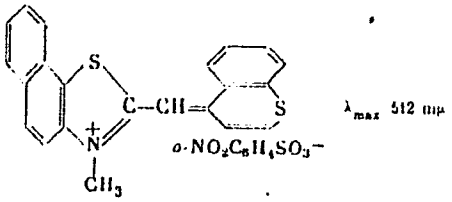
4-methoxybenzothiopyrylium with, respectively, methyl-o-nitrobenzenesulfonate of 2-methyl-6-nitrobenzothiazole, and o-nitrobenzenesulfonate of 2-methyl- α-naphthothiazole.



λ_{max} 538, 510 mμ;

(II)



λ_{max} 512 mμ

(III)

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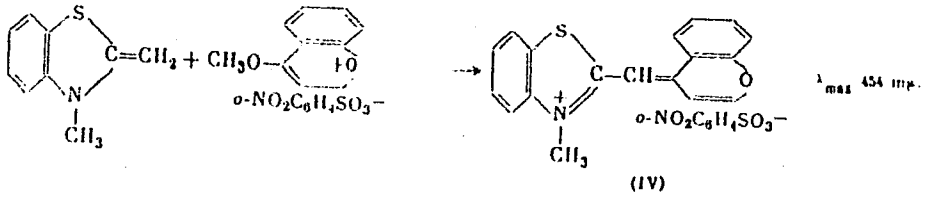
Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

77909
SOV/79-30-2-60/78

Tertiary oxonium salts of chromones do not yield monomethinecyanines under the above conditions, but can be condensed easily with quaternary salts of 2-methylbenzothiazole when the latter were converted with alkali into methylene bases. Accordingly, o-nitrobenzenesulfonate of 4-methoxybenzopyrylium in acetic anhydride, and 3-methyl-2-methylenebenzothiazoline in glacial acetic acid on heating for 1 hr at 100 ° C gave (IV) (red-orange needles; yield 50%; decomp. 256 ° C).



(IV)

Card 4/12

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

77909
SOV/79-30-2-60/78

In this manner, the condensation of the salts of chromone, flavone, and 5,6-benzochromone with 2-methylene-3-methyl-(or 3-ethyl)-benzothiazoline, 2-methylene-3-methyl-6-nitrobenzothiazoline, and 2-methylene-3-methyl-(or 3-ethyl)- α -naphthothiazoline gave the yellow and orange monomethinecyanines (V) - (X), in quantitative yield. Monomethinecyanine (XI) (orange flakes; decomp. 295 $^{\circ}$ C) of a similar structure was obtained by condensing 2-methylchromone with Larivé reagent (3-methylbenzothiazole-2-sulfobetaine) for 3 hr at 150 $^{\circ}$ C and heating the base, thus obtained, for 1 hr at 150 $^{\circ}$ C with dimethyl sulfate. Heating 2-methyl chromone with methyl ester of o-nitrobenzenesulfonic acid in toluene gave (XII) (dark purple needles; decomp. 264 $^{\circ}$ C). Heating 2-methylchromone with P_2S_5 in xylene, and treating the base thus obtained with dimethyl sulfate gave (XIII) (dark purple needles; decomp. 249 $^{\circ}$ C). Flavone in reaction with Grignard's reagent in ethyl ether gave easily salts of 4-methylflavylium containing an active methyl group.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

77909
SOV/79-30-2-60/78

The condensation of 4-methylflavylium perchlorate with o-nitrobenzenesulfonate of 4-methoxybenzopyrylium gave (XIV) (brown needles; decomp. 249 ° C). Similarly, the reaction of the perchlorate with o-nitrobenzenesulfonate of 4-methoxybenzothiopyrlium gave (XV) (deeply colored; decomp. 243-245 ° C). Study of the absorption spectra showed that the monomethinecyanines containing 2 benzenepyrylium groups (XII - XIV) had a deeper color than the others. There are 8 references, 1 U.S., 1 French, 2 Swiss, 1 German, 1 Polish, and 2 Soviet. The U.S. reference is: A. Schoenberg, M. Sidsky, G. Aziz, J. Am. Chem. Soc., 76, 5117 (1954).

ASSOCIATION: Institute of Organic Chemistry, Academy of Sciences UkrSSR (Institut organicheskoy khimii Akademii nauk Ukrainskoy SSSR)

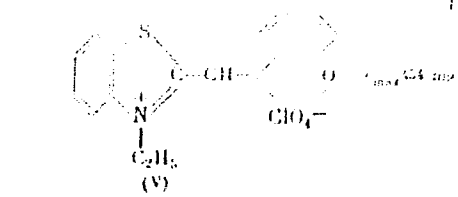
SUBMITTED: February 16, 1959

Card 6/12

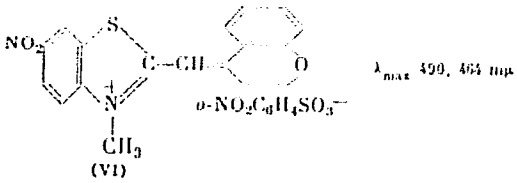
APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

77909, SOV/79-30-8-60/78



(V)



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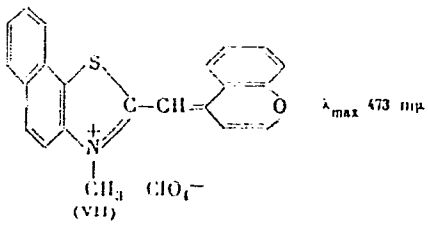

(VII)

Card 7/12

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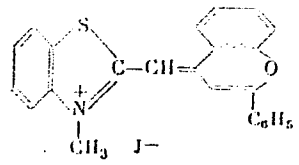
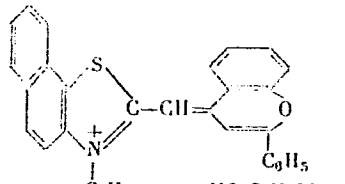
"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

77909, SOV/79-30-2-50/78



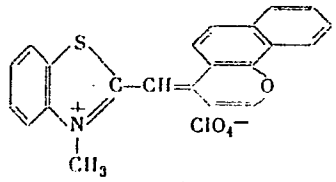
λ_{max} 452 mμ

(VIII)



λ_{max} 503 mμ;

(IX)



λ_{max} 488, 463 mμ

(X)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

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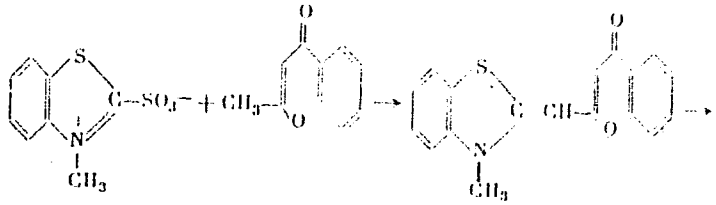
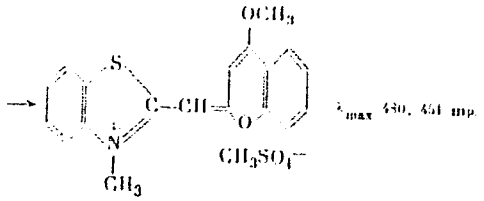
SOV/79-30-2-60/78





(XI)

Card 9/12

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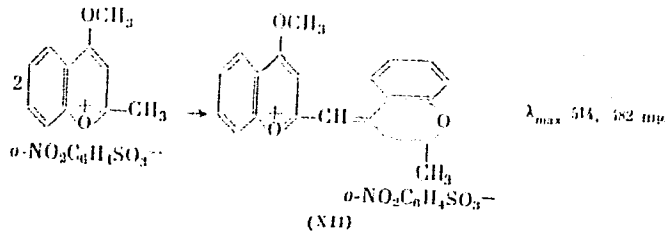

(XII)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

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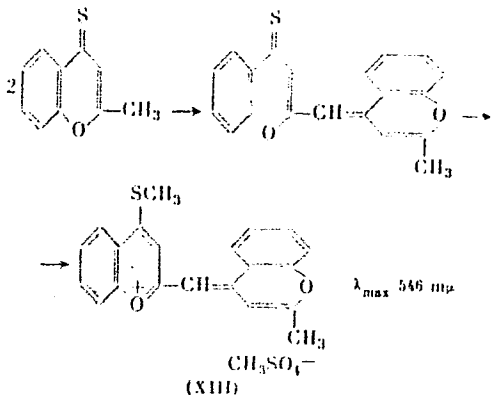
SOV/79-30-2-60/78



(XIII)

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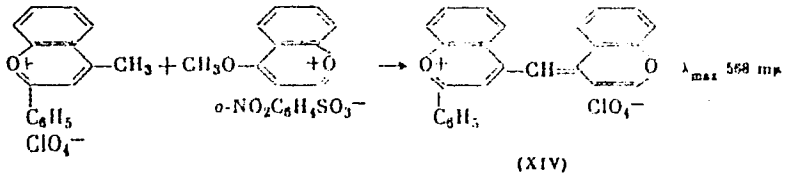
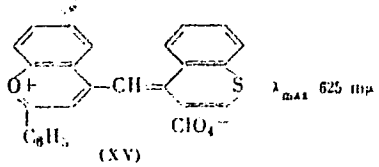
"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

Condensation of Tertiary Oxonium Salts of Chromones and Thiochromones With Compounds Containing Active Methyl or Methylene Groups

77909
SOV/79-30-2-60/78



(XIV)



(XV)

Card 12/12

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.I.

Synthesis of dicarbocyanines by the cleavage of the pyrylium ring of pyrylocyanines. Zhur. ob. khim. 30 no.9:2892-2904 S '60. (MIRA 13:9)

1. Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR.
(Pyrylium compounds) (Cyanines)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.I.

Condensation of tertiary oxonium salts of chromones and thiochromones with dialkylanilines. Zhur. ob. khim. 30 no.9:2884-2892 S '60. (MIRA 13:9)

1. Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR.
(Aniline) (Chromone)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.I.

Reactions of pyrylocyanines with compounds containing active methyl or methylene groups. Zhur. ob. khim. 30 no.11:3640-3647 N'60. (MIRA 13:11)

1. Institut organicheskoy khimii Akademii nauk Ukrainskoy SSR.
(Cyanines) (Benzothiazole)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

SYCH, Yu.D.; TOMACHEV, ...I.

Synthesis of 3-methyl-4-nitrobenzothiazoles. Ukr. khim. zhur. 27 no. 1:80-82 '61. (MIRA 14:3)

1. Institut organicheskoy khimii AN USSR.
(benzothiazole)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.I.; SRIBNAYA, V.P.

Condensation of thiochromone with compounds containing active methyl or methylene groups. Zhur.ob.khim. 32 no.2: 383-390 F '62. (MIRA 15:2)

1. Institut organicheskoy khimii AN Ukrainskoy SSR.
(Thiochromone)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.I.

Interaction of chromone with compounds containing active methyl and methylene groups. Zhur.ob.khim. 32 no.11:3745-3752 N '62. (MIRA 15:11)

1. Institut organicheskoy khimii AN Ukrainskoy SSR.
(Chromone)
(Methyl group) (Methylene group)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.I.; SRIBNAYA, V.P.; SHCHEGLOVA, L.V.

Chloro-substituted benzopyrylomonomethinecyanines. Zhur.ob. khim. 33 no.2:440-447 F '63. (MIRA 16:2)

1. Institut organicheskoy khimii AN UkrSSR.
(Methinecyanine) (Benzopyrylium compounds)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.I.; SHCHEGLOVA, L.V.

Synthesis of meso-arylthiacarbocyanines in the cleavage of the pyrylium ring of pyrylocyanines. Zhur.ob.khim. 33 no.2:448-453 F '63. (MIRA 16:2)

1. Institut organicheskoy khimii AN UkrSSR.
(Thiacarbocyanine) (Pyrylium compounds)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.I.; SRIBNAYA, V.P.

Interaction of benzothiapyrylium perchlorate with nucleophilic agents. Zhur.ob.khim. 33 no.12:3864-3871 D '63. (MIRA 17:3)

1. Institut organicheskoy khimii AN UkrSSR.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

AUTHORS: Trapeznikov, A.A., Tolmachev, A.M. 76-32-3-40/43

TITLE: On the Influence Exerted by the Conditions of Precipitation of Aluminum Hydroxide Upon the Properties of Thickening (O vliyanii usloviy osazhdeniya gidrookisi alyuminiya na yeye zagushchayushchiye svoystva)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol 32, Nr 3 pp 725-726 (USSR)

ABSTRACT: The mechanical properties of aluminum oxide pastes in paraffin oil were hitherto investigated, except for those properties mentioned in the title, which are, however, of importance in the production of polarographic colors. The present paper deals with the influence of the pH in precipitations upon the thickening properties of aluminum hydroxide in nonpolar medical paraffin oil. Two varieties of the production of the paste are described, the second one being a modification of the method of precipitation according to A. A. Trapeznikov (reference 2). The aluminum hydroxide precipitations were performed at different pH and the prepared paste was then examined for its bending strength. The test apparatus

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

76-32-3-40/43

On the Influence Exerted by the Conditions of Precipitation of Aluminum Hydroxide Upon the Properties of Thickening

developed in the institute mentioned below had already been described and is based on a tangential arrangement of the samples. The obtained results are graphically represented and it is concluded from them that the pH value of the precipitation exerts a very great influence upon the properties of aluminum hydroxide, so that in the case of several equal pH values products with the necessary properties can be obtained. There are 1 figure, and 4 references, 4 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva (Moscow, Institute of Physical Chemistry, AS USSR)

SUBMITTED: June, 12, 1957

Card 2/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

AT5002309 S/0000/64/000/000/0033/0035

AUTHOR:

TITLE: Investigation of the ion exchange properties of A-type synthetic zeolite

material

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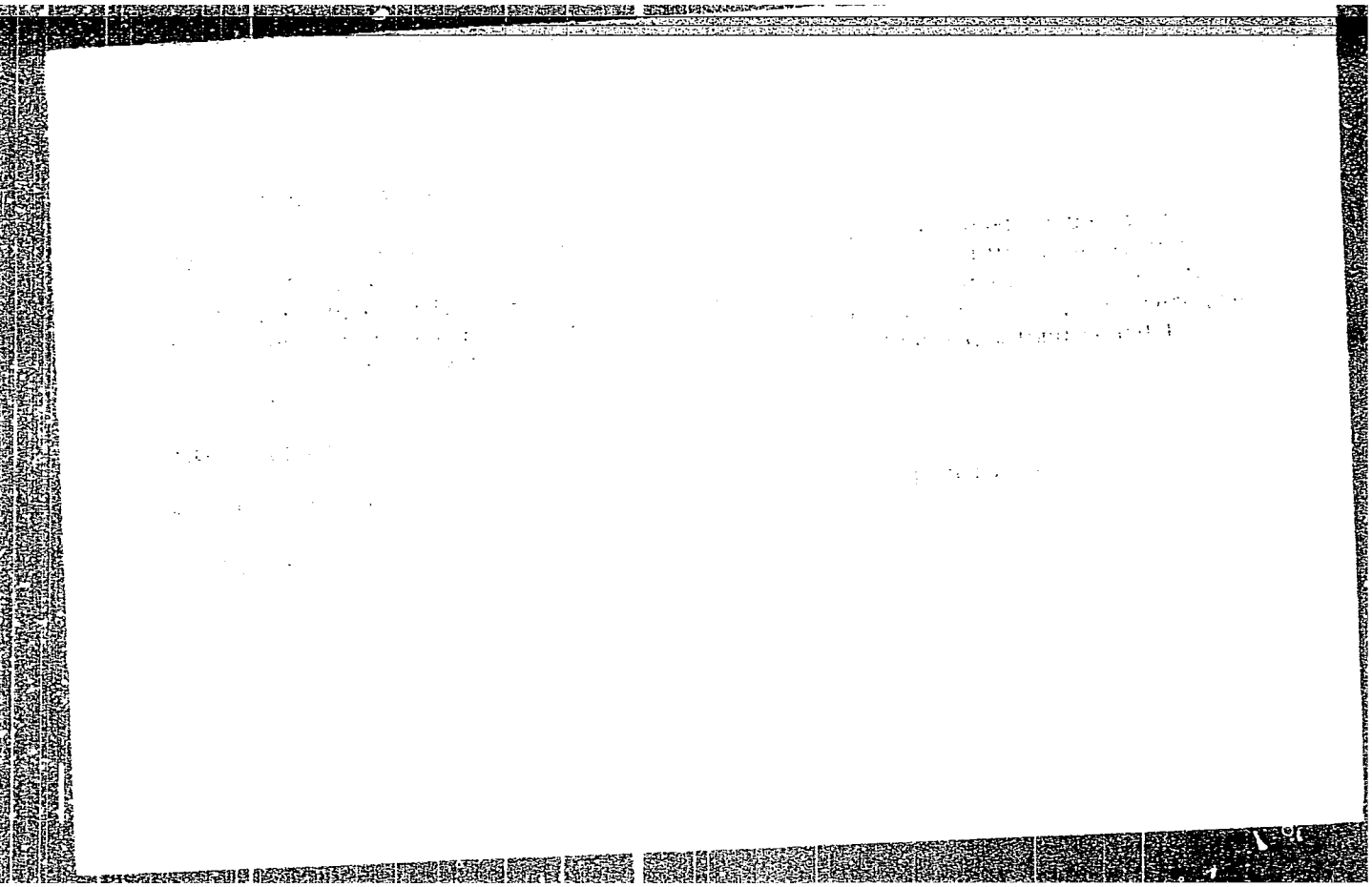

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SOV/32-25-5-44/56

28(5)
AUTHORS: Shchegolev, G. G., Tolmachev, A. M., Trapeznikov, A. A.

TITLE: Apparatus for Investigating the Properties of Resistance to Deformation of Pasty Colloid Systems (Pribor dlya issledovaniya deformatsionno-prochnostnykh svoystv pastoobraznykh kolloidnykh sistem)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 5, pp 625-627 (USSR)

ABSTRACT: An apparatus is described which operates on the principle of the tangent shift of a steel lamella, which has already been used in asphalt investigations (Ref 1), etc (Refs 2-4). One of the advantages of the apparatus is that the structure of the system to be investigated is not destroyed when the corresponding substance is filled in. The apparatus (Fig 1, Draft) has a cuvette and a drive. The latter can load the measuring metal lamella either constantly or increasingly in certain intervals. The cuvette consists of two screwed metal lamellas (Fig 2) of stainless steel. The substance to be investigated is filled in a grooved indentation of the cuvette bottom where also the equally grooved measuring metal lamella is inserted. The shift of the measuring metal lamella results from the loading of the

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

Apparatus for Investigating the Properties of Resistance to Deformation of Pasty Colloid Systems

drive via a dynamometer spring. The deformation of the dynamometer is read by means of the microscope MIR-1 with the eyepiece micrometer AM-IKh-11 with an accuracy of 2μ. There are two ways of loading, as mentioned above, whereby the results can also be plotted according to several variants. The reproducibility of parallel measurements of a 12% lithium lubricating paste and a 33% aluminum hydroxide vaseline grease paste is indicated as being 3-5% (Fig 3). There are 3 figures and 5 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

5(4) SOV/80-32-4-10/47

AUTHORS: Trapeznikov, A.A. Tolmachev, A.M.

TITLE: Methods for Preparing Aluminum Hydroxide and the Deformation-Resistant Properties of Its Pastes in Vaseline Oil (Metody polucheniya gidrookisi alyuminiya i deformatsionno-prochnostnyye svoystva yeye past v vazelinovom masle)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 763-770 (USSR)

ABSTRACT: Aluminum hydroxide is widely used in industry, especially for printing dyes. The effect of conditions of its deposition on the stability of structure of its pastes in pure medical vaseline oil and their transparency is studied here. Deposition of aluminum hydroxide was carried out at pH-values varying from 4.0 to 9.0. The hydroxide was prepared from potassium-aluminum alums and soda in 0.5 n-solutions. The filtered deposits were dried at 61°C. The best results were observed at pH-values of 5.0-8.0 with a sharp maximum at 6.5. i.e., in the isoelectric point. Other maxima were at pH=5.3 and 8.0. The course of the curve was determined by the method of washing of the deposit. The size of the particles and the density of their packing determined the value of their active surface and affected also

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

Methods for Preparing Aluminum Hydroxide and the Deformation-Resistant Properties of Its Pastes in Vaseline Oil

their humidity. The transparency of the pastes changes directly with the content of the SO_4-groups in the deposit and reaches a maximum at pH = 5.3. The hydroxide pastes in vaseline oil have no elastic aftereffect and behave like elastic-brittle bodies. Figurovskiy is mentioned in the text.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry AS USSR)

SUBMITTED: January 27, 1958.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

5(4),21(5)
AUTHORS: Panchenkov, G. M., Tolmachev, A. M., Kondratova, V. B. SOV/76-33-3-38/41

TITLE: On a New Method of Isotope Separation (O novom metcde razdeleniya izotopov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 3, pp 734-735 (USSR)

ABSTRACT. Contrary to previous assumptions it was shown (Refs 1-3) that the isotopes of various elements have unequal molar volumes such as hydrogen, lithium, and mercury isotopes. In this paper the authors decribed the separation of oxygen isotopes by means of bis-(N,N'-disalicylal ethylenediamine)-μ-aquo-dicobalt (Ref 4), which strongly absorbs oxygen at 40° C and loses it again at 60° C. In order to determine a "screening effect" of this substance for isotope molecules of oxygen, the authors computed the distribution coefficient α in glass-bulbs of a capacity of 2,000, 1,000, 500, 250, and 125 ml at a pressure of between ≈760 and ≈380 torr and a temperature of 20±3° C. The results of measurement are listed (Table); they indicate that isotopes may be separated in the

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On a New Method of Isotope Separation SOV/76-33-3-38/41

gas and liquid phase according to the aforesaid method. Corresponding investigations are presently being made by the authors of this paper. There are 1 table and 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. Lomonosova (Moscow State University imeni Lomonosov)

SUBMITTED: December 3, 1958

Card 2/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

SOV/76-33-7-27/40

5(4)

AUTHORS: Trapeznikov, A. A., Tolmachev, A. M.

TITLE: On the Problem of the Formation of Aluminum Hydroxide

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7, pp 1632 - 1637 (USSR)

ABSTRACT: The authors investigated the influence exerted by the pH and other factors during the formation of aluminum hydroxide (I) upon its capability of thickening and several other properties of the produced (I) since it is used for polarographic colors. For this reason, investigations were for the major part carried out with solutions of potassium-aluminum alum (II) and sodium carbonate, and NaOH solutions were used only for the purpose of rendering reaction conditions less complicated. Titration was carried out potentiometrically with 0.5 n (0.4994 n) (II)-solutions, 0.5 n (0.4910 n) $AlCl_3$ solutions and NaOH solutions of various concentrations by means of glass electrodes (PPTV-1 potentiometer). The precipitate of (I) was dried at 105°C and analyzed with respect to its SO_4^{2-} content (Table). The aging of the precipitate in solutions with different pH resulted in a complicated change in the

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course of the titration curve. At a ratio of $3.0 < OH/Al < 4.0$, the pH slightly falls in the first two hours, and then rises sharply (which is ascribed to reduced solubility of the precipitate as a consequence of aging) and remains constant. At $OH/Al < 3.0$, the pH decreases in the course of time, and the titration curve attains a maximum and minimum (which is explained by two processes, i. e. 1) successive transformation of the crystal structure of (I), and 2) transition of basic aluminum salts into (I). In acid solutions (pH = 4.0 - 4.5), the pH almost does not change in the course of time. The most complete precipitation of aluminum from 0.5 n (II)-solutions with 0.5 n sodium carbonate solution takes place at pH = 5.0 - 5.3. There are 2 figures, 1 table, and 18 references, 4 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva (Academy of Sciences of the USSR, Institute of Physical Chemistry, Moscow)

SUBMITTED: January 18, 1958

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A. M.

TOLMAHGEV, A. M. and PANCHENKOV, G. M.

"Zur Trennung der Isotope des Sauerstoffs mit Hilfe organischer Komplex Verbindungen des Kobalts."

Report presented at the 2nd conf. on Stable Isotopes.
East German Academy of Sciences, Inst. for Applied Physical Material
Leipzig, GDR, 30 Oct - 4 Nov 1961

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

S/195/62/003/003/002/002
E075/E436

AUTHORS: Panchenkov, G.M., Tolmachev, A.M.

TITLE: On the question of the interaction of oxygen with the complex organic cobalt compounds

PERIODICAL: Kinetika i kataliz, v.3, no.3, 1962, 378-384

TEXT: The authors investigated the kinetics of the interaction of O with bis-(N,N'-disalicylalethylenediamine)-μ-aquadicobalt (CoX) and bis-(N,N'-di-(3-nitrosalicylal)-ethylenediamine)-μ-aquadicobalt (3-NO2-CoX). It was found that both compounds absorb O with the evolution of heat, the maximum amount of the absorbed oxygen being 1 molecule of O for 2 atoms of Co. At low temperatures the reaction is almost irreversible, but beginning at 30°C for CoX and 40°C for 3-NO2-CoX, the strength of attachment of O to the complexes rapidly decreases and the reaction becomes reversible. The following scheme is proposed for the reactions:

$$O_2 \text{ gas in bulk} \xrightarrow{I} O_2 \text{ gas on the surface}$$

- Diffusion of O_2 towards the surface of the solid phase

Card 1/3

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S/195/62/003/003/002/002
E075/E436

On the question of the interaction ...

O_2 (gas on the surface) $\xrightarrow{II}$ O_{2ads} - Adsorption of O_2 on the surface

$O_{2ads} \xrightarrow{III}$ O_2 in the bulk of the solid phase - Diffusion of the adsorbed O_2 molecules into the solid phase

O_2 (inside the solid) $\underset{IVa}{\overset{(+2CoX)\ IV}{\rightleftharpoons}}$ CoX_2O_2 - Chemical reaction of the O_2 in the solid with the complex molecules

$Co_2X_2O_2 \xrightarrow{(+2CoX^{*})\ V}$ $2CoX + Co_2X_2^{*}O_2$ - Saturation of the complex molecules, for which reaction IV is not admissible.

The rates for the processes I and II are higher than that for process III. The latter is the rate determining process for the

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reaction below the critical temperatures. Above the critical temperatures both processes III and IV are equally slow and the kinetic S-shaped curves characterize the subsequent reactions. Process V occurs rapidly and is not considered in the kinetic studies. There are 4 figures and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet
im. M.V.Lomonosova Khimicheskiy fakul'tet
(Moscow State University imeni M.V.Lomonosov
Chemistry Division)

SUBMITTED: May 11, 1961

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.M.; DENISOVA, L.V.; FEDOROV, V.A.; PANCHENKOV, G.M.

Elution-partition of alkali metal ions on a synthetic A-type zeolite. Vest. Mosk. un. Ser. 2 Khim. 19 no.2:20-22 Mr-Ap'64

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

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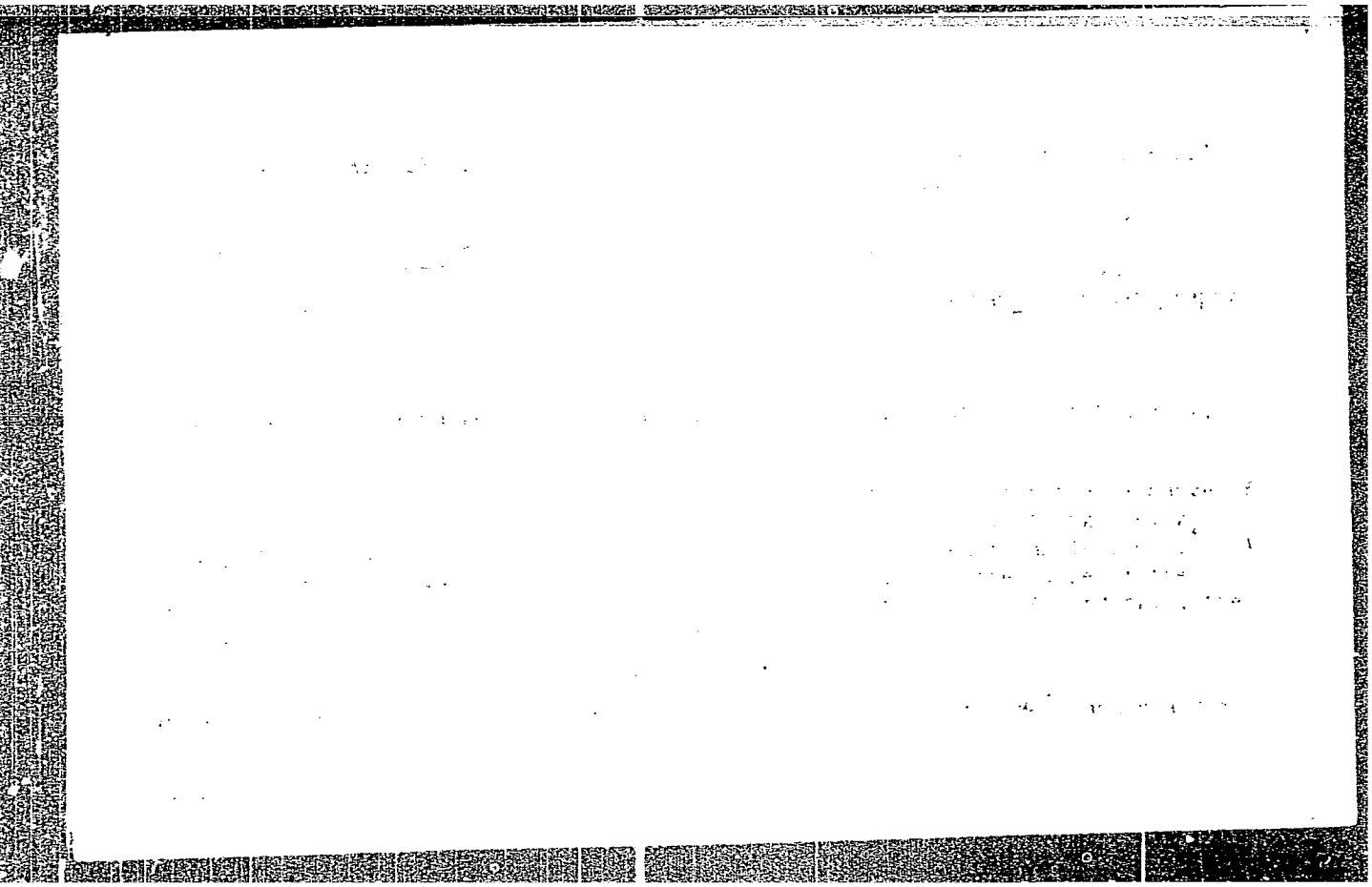

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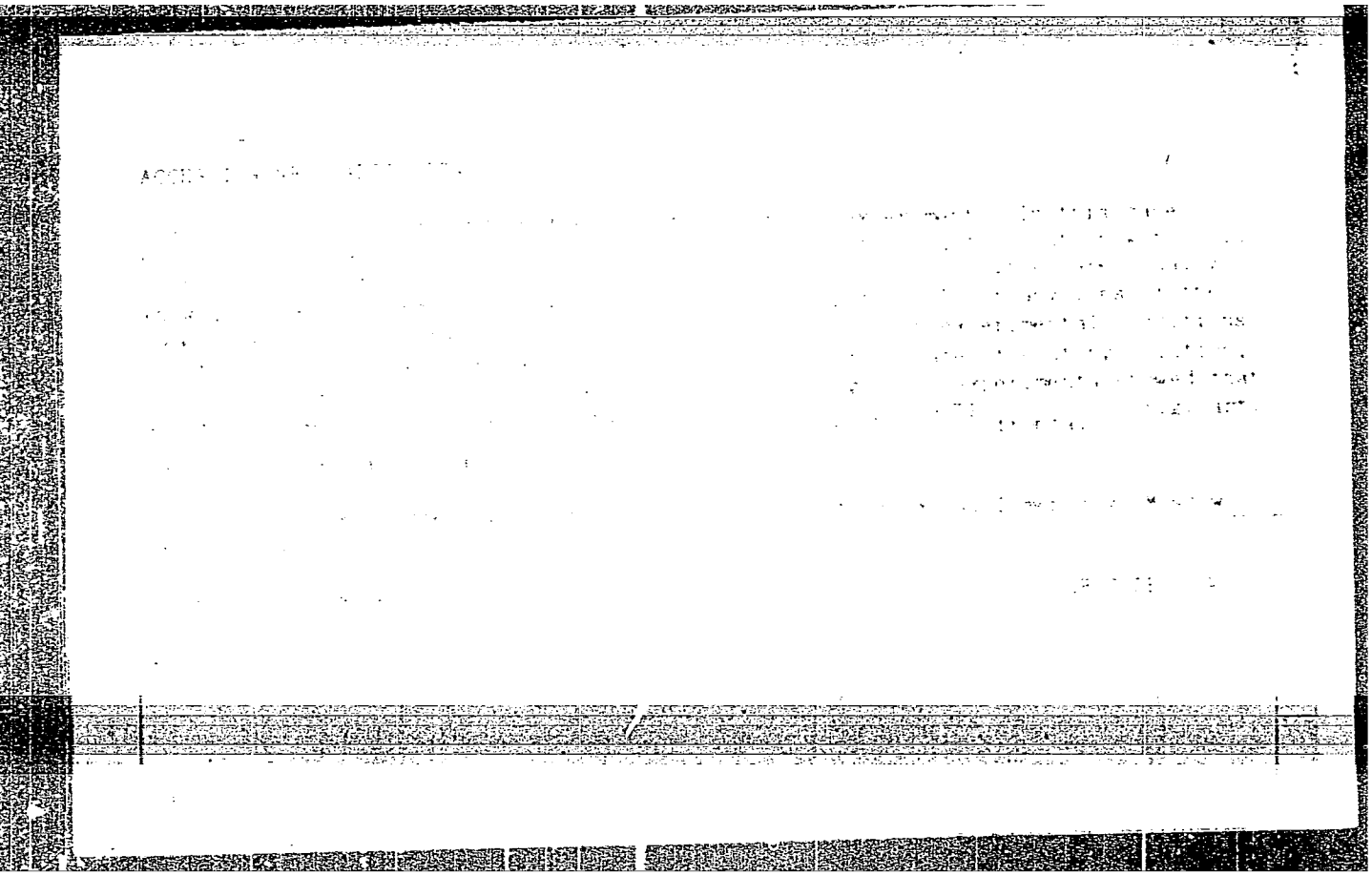

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

44350
S/195/62/003/006/003/011
E075/E436

5.2440

AUTHORS: Panchenkov, G.M., Tolmachev, A.M.

TITLE: Kinetics of isotopic exchange between gaseous oxygen and oxygen absorbed by the organic complex compounds of cobalt

PERIODICAL: Kinetika i kataliz, v.3, no.6, 1962, 861-864

TEXT: The isotopic exchange reaction

$$^{16}O^{18}O_{gas} + Co_2X_2^{16}O_2\ solid \rightleftharpoons {}^{16}O_2\ gas + Co_2X_2{}^{16}O^{18}O_{solid}$$

where X is bis-(N, N^1-disalicylalethylenediamine)-μ-aquodicobalt, was studied for the first time. The complex saturated with oxygen at a given temperature and about 380 mm Hg was evacuated and saturated with $^{16}O^{18}O$. Samples of the gas were withdrawn periodically and analysed by mass spectrometry. The rate of isotopic exchange was measured by

$$F = \frac{C - C_o}{C_\infty - C_o}$$

where C and C_o - molar fractions of the isotopic O at times t

Card 1/3

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and t = 0, respectively and C_∞ - the molar fraction of the O molecules at equilibrium at which the isotopic composition is the same in the solid and gaseous phases. In most cases the equilibrium was not reached with the exception of CoX at 40°C. This made the calculation of C_∞ difficult except for the reaction at 40°C. The isotopic exchange was postulated to proceed in two steps:

$$^{16}O^{18}O_{gas} + Co_2X_2{}^{16}O_{2\,solid} \xrightarrow{1} {}^{16}O_{2\,gas} + Co_2X_2{}^{16}O^{18}O_{solid} \xrightarrow[+\,Co_2X_2{}^{16}O_2]{2}$$

$$\rightarrow Co_2X_2{}^{16}O_2 + Co_2X_2{}^{16}O^{18}O$$

The first reaction is fast and determined by the rate of diffusion of isotopic O_2 into the crystals of the complexes. The diffusion into the narrowest pores of the crystals was stopped however by O molecules combined with the complexes. At this stage the second slow reaction begins. The second stage is accelerated at 40 to 65°C due to weakening of bonds between O and the complexes. The effective coefficient of autodiffusion of O in $Co_2X_2O_2$

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particles at 40°C was calculated to be about 2.3×10^{-11} cm^2/sec using R. Barrer's equation (Diffuziya v tverdykh lekakh (Diffusion in solids) Izd-vo inostr. lit., M., 1948, 43). There are 3 figures and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (Moscow State University imeni M.V.Lomonosova)

SUBMITTED: May 11, 1961

Card 3/3

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

PANCHENKOV, G.M.; TOLMACHEV, A.M.

Kinetics of isotopic exchange between gaseous oxygen and oxygen absorbed by the complex organic compounds of cobalt. Kin.i kat. 3 no.6:861-864 N-D '62. (MIRA 15:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Oxygen—Isotopes)
(Cobalt organic compounds)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

45148

S/076/63/037/002/018/018
B144/B180

5,3821

AUTHORS: Panchenkov, G. M., Tolmachev, A. M., Fedorov, V. A.

TITLE: Synthetic zeolites as ion exchangers. II. Study of the ion exchange equilibrium

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 2, 1963, 456-459

TEXT: The equilibrium of the exchange of NH_4^+, Li^+, Na^+, Ca^{2+}, Pb^{2+} ions was studied on two samples of synthetic 4A zeolites at 20 ± 2°C. Based on the equation of R. M. Barrer and J. D. Falkoner (Proc. Roy. Soc., A236, 227, 1956), $\log K'_{th} = \log (M_{BX}M_{AZ}/M_{BZ}M_{AX}) + a(1 - 2M_{AZ})$ was derived for the 1,1-valent ion exchange and $\log K''_{th} = \log K + a\,(M_{AZ} - 1/2M_{BZ})/(M_{AZ} + 1/2M_{BZ})$ for the 1,2 ion exchange, where K_{th} are the thermodynamic equilibrium constants, M the concentration, B the univalent cation, X the univalent anion, A a cation of valency 1 or 2, and Z the zeolite. The second equation holds only for constant concentrations of the solution. These equations include the ratio of the

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Synthetic zeolites as ion ...

ion activities in solution and show that K'_{th} is independent of the concentration, whereas K''_{th} decreases significantly when the concentration increases. This was proved by the values calculated for the systems $CaCl_2$ + Li4A; $Pb(NO_3)_2$ + $NH_4$4A; $CaCl_2$ + Na4A. K_γ is highly dependent on the degree of exchange. It decreases when small ions are replaced by big ions or univalent by bivalent ions. The separating capacity of synthetic zeolites is 150-900% greater than that of ion exchange resins. There are 2 figures and 4 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 21, 1962

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.M.; GORSHKOV, V.I.; PANCHENKOV, G.M.

Exchange dynamics of ions of different valencies. Zhur.fiz.khim. 37 no.7: 1635-1636 Jl '63. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

PANCHENKOV, G.M.; TOLMACHEV, A.M.

Synthetic zeolites as ion exchangers. Part 1: Kinetics of ion exchange. Kin. i kat. 4 no.6:853-858 N-D '63. (MIRA 17:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.M.; FEDOROV, V.A.; PANCHENKOV, G.M.

Synthetic zeolites as ion exchangers. Part 3. Zhur. fiz. khim. 37 no.11:2548-2550 N'63. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

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tion

Good reproducibility of [illegible] made it possible to obtain [illegible] additional heating having no effect on [illegible].

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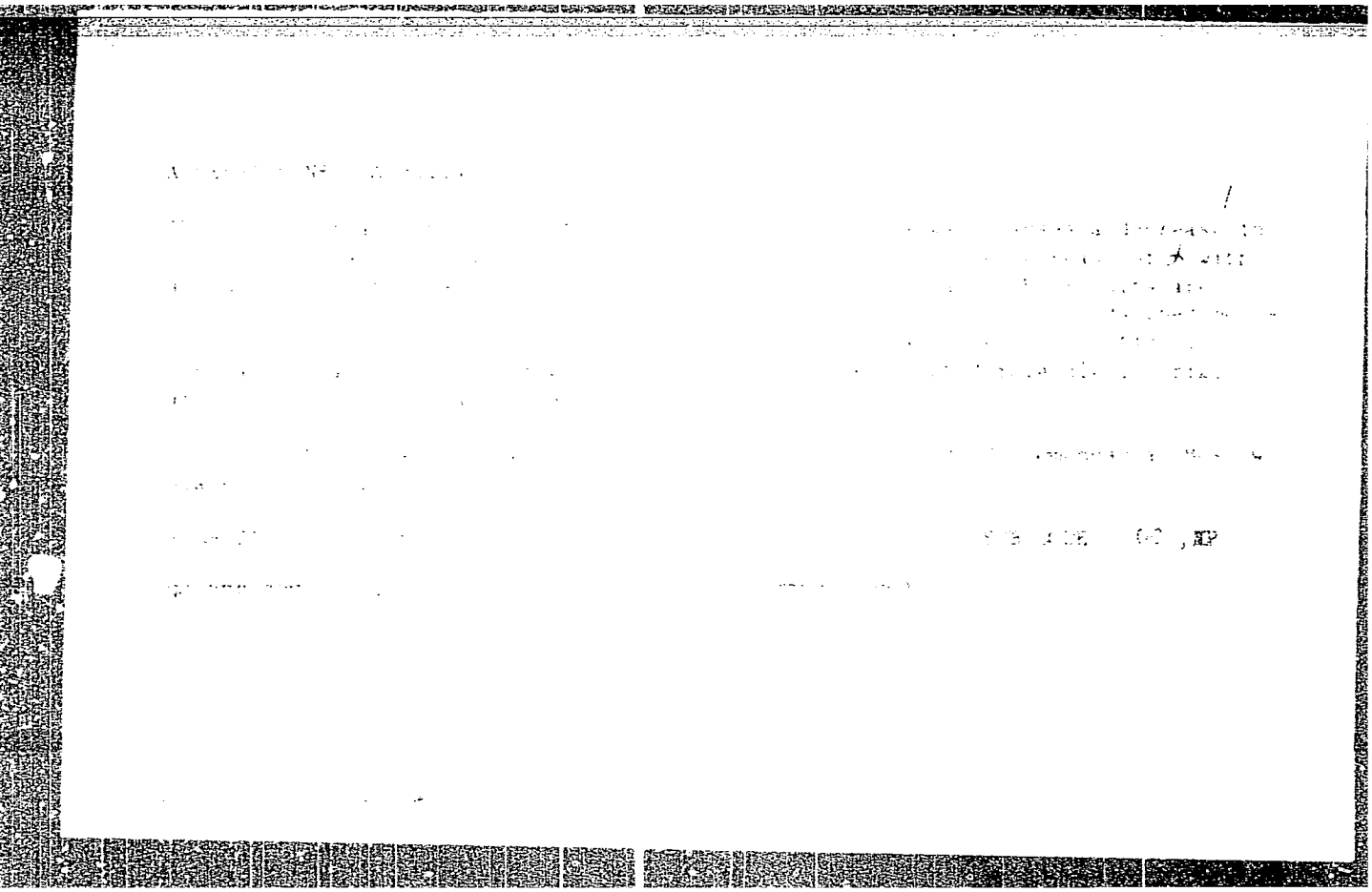

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

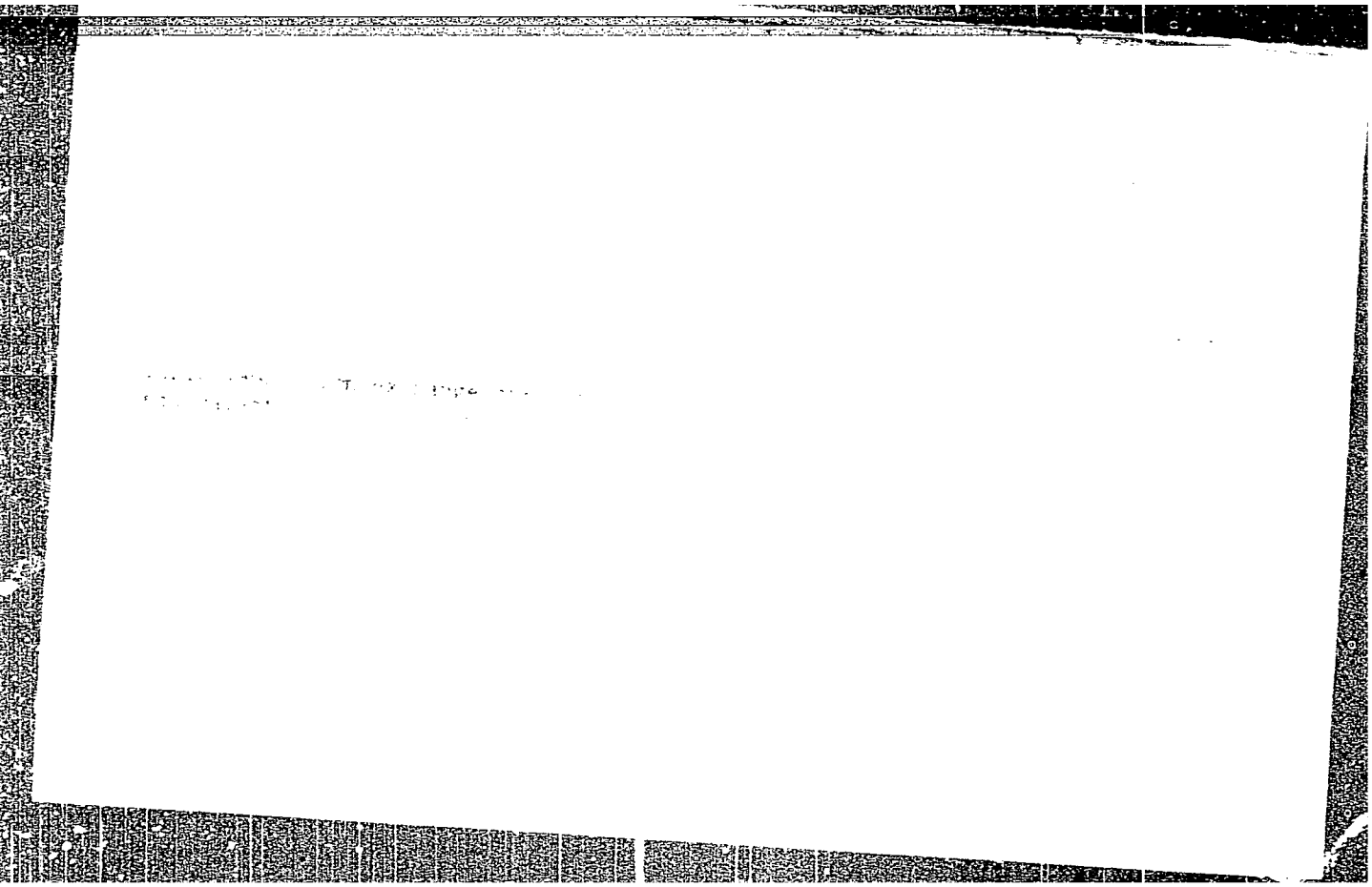
TOLMACHEV, A.M.; FEDOROV, V.A.; PANCHENKOV, G.M.

Dependence of the height of an equivalent theoretical plate in ion exchange chromatography on ion mobility. Zhur. fiz. khim. 39 no.5:1168-1170 My '65. (MIRA 18:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1



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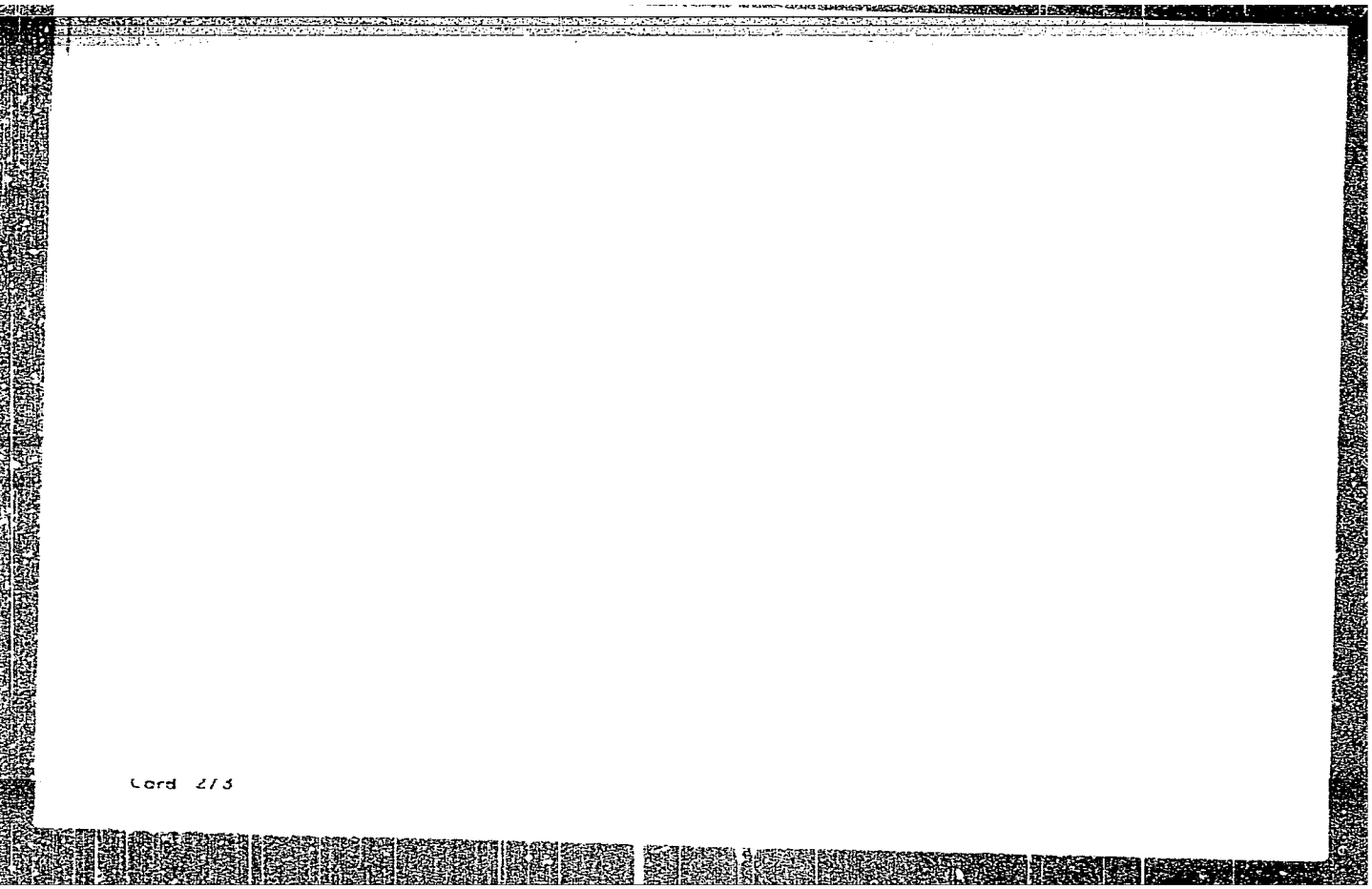

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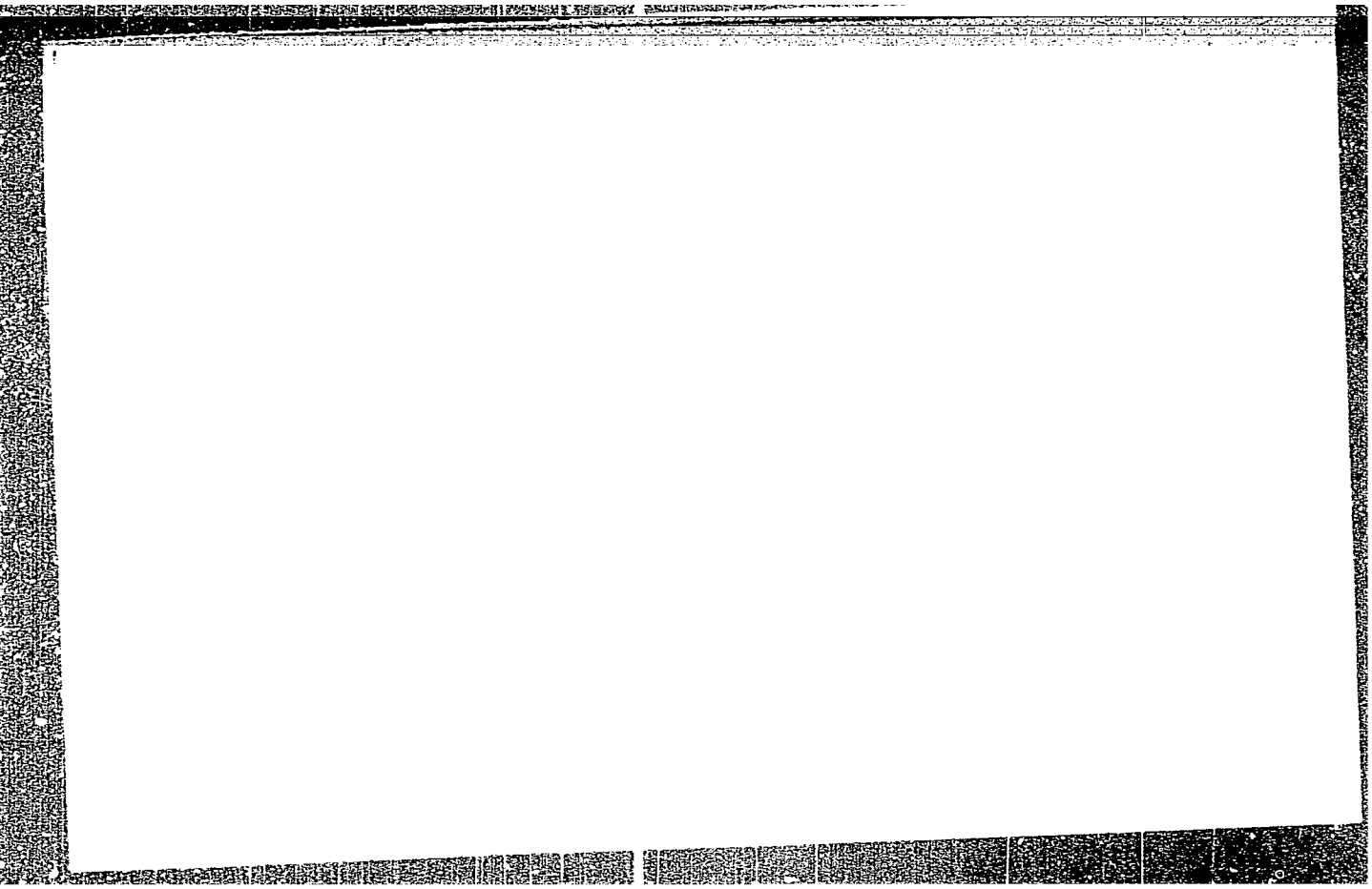

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

L 11146-66 EWT(m)/ETC/EWG(m)/T DS/RM

ACCESSION NR: AP5023691 UR/0076/65/039/009/2259/2264
543.544

AUTHOR: Tolmachev, A. M.; Fedorov, V. A.

TITLE: Study of the ion exchange properties of type X zeolite

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 9, 1965, 2259-2264

TOPIC TAGS: zeolite, cation, ion exchange

ABSTRACT: The ion exchange properties of type X zeolite were studied and compared with those of type A zeolite, which had been determined earlier. Exchange isotherms were obtained for various pairs of univalent cations, and the thermodynamic equilibrium constants $K_{thermod}$ and activity coefficients for these ions were calculated. From the values of $K_{thermod}$, the following selectivity series of type X zeolite for univalent ions was established:

$$K^+ > Na^+ \geq Rb^+ > NH_4^+ > Cs^+ > Li^+ \geq (CH_3)_2NH_2^+,$$

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L 1116-66

ACCESSION NR: AP5023691

3

which is almost the same as the selectivity series of type A zeolite:

$$K^+ > Na^+ > NH_4^+ > Rb^+ > Cs^+ > Li^+ > (CH_3)_2NH_2^+.$$

Thus, although the exchange capacities of type X are more constant than those of type A, the properties of both zeolites are basically similar. In both cases, the affinity for the zeolite is a function of the size and hydration energy of the ions. It is noted that type X has a high separatory capacity with respect to Rb^+ and Cs^+ ions ($K_{thermod} \approx 5$), the separation of which is of major practical importance. Orig. art. has: 4 figures, 2 tables, 4 formulas.

ASSOCIATION: Khimicheskiy fakul'tet, Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Chemistry Department, Moscow State University)

SUBMITTED: 08Sep64 ENCL: 00 SUB CODE: GC

NO REF SOV: 007 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOIMACHEV, A.M.; FEDOROV, V.A.; [illegible]

Determination of the activity coefficients of monovalent ions in a type-A synthetic zeolite. Vest.Mosk.un.Ser.2:Khim. 19 no.4:7-12 Jl-Ag '64. (MIRA 18:8)

1, Kafedra fizicheskoy khimii Moskovskogo universiteta.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

FEDOROV, V.A.; TOLMACHEV, A.M.; PANCHENKOV, G.M.

Exchange equilibrium of univalent ions on the A-type synthetic zeolite. Zhur. fiz. khim. 38 no.5:1248-1253 My '64.
(MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
Submitted July 24, 1963.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

PANCHENKOV, G.M.; TOLMACHEV, A.M.; ZOTOVA, T.V.

Separation of hydrogen isotopes in the sorption of hydrogen on synthetic zeolites. Zhur. fiz. khim. 38 no.5:1361-1365 My '64. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova. Submitted July 24, 1963.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.M.; ZOTOVA, T.V.; YELISEYEVA, N.M.

Dependence of a single separation coefficient of hydrogen isotopes from the cation composition of type A and X zeolites. Zhur. fiz. khim. 39 no.4:1021-1025 Ap '65.

(MIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
Submitted Nov. 23, 1964.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A.M.; FEDOROV, V.A.

Study of ion exchange properties of Y-type zeolites. Zhur. fiz. khim. 39 no.9:2259-2264 S '65. (MIRA 18:10)

1. Khimicheskiy fakul'tet, Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

L 43984-66 EWT(1)/T IJP(c) JGS

ACC NR: AP6030147 SOURCE CODE: UR/0120/66/000/004/0154/0156

AUTHOR: Gorbenko, B. Z.; Granigg, A. B; Drozhbin, Yu. A.; Korinfskiy, D. F; Tolmachev, A. M.

ORG: none

TITLE: Moving-image camera with an electron-optical converter

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 154-156

TOPIC TAGS: high speed camera, electrooptic camera

ABSTRACT: An FEP-1 photographic chronograph capable of recording events at speeds of 20—160 km/sec is described. The system is suitable for determining the luminescence time in GaAs crystal p-n junctions, and for recording high-speed transient processes associated with exploding wires and the electrical discharge in gases. The photochronograph consists of an optical system, an image converter, a two stage light amplifier, and the control circuits. The optical part has a mirror lens with a focal length and a relative aperture of 2000 mm and 1:10, respectively. A vertical time controlled slit in the focal surface of the input lens allows the light to reach the electron-optical converter cathode. After amplification by the converter, the image of the process under study is time swept, displayed on its screen, and then photographed on film. Each image on the film contains time marks whose error is not greater than ±0.4%. The electronic control circuits consist of a sweep generator

Card 1/2 UDC: 621.383.6:778.37

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L 40984-66

ACC NR: AP6030147

(capable of forming 4 kv, 0.25 μsec pulses with a linearity error of less than 2%), a shutter pulse generator, a time mark generator (forming 3—5 μsec, 200 v pulses), starting and other auxilliary circuits. The time resolution of this system is at best 6×10^{-10} sec. Its spectral sensitivity range is from 4000 to 12000 A. The distortion of the photographed images does not exceed 7%. The installation measures 2200 x 470 x 700 mm. Orig. art. has: 3 figures. [BD]

SUB CODE: 14, 09/ SUBM DATE: 30Jun65/ ORIG REF: 005/ ATD PRESS: 5071

Card 2/2 UDR

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

L 44603-66 EWT(1)/EWT(m)/EEC(k)-2/T/EWP(t)/ETI/EWP(k) IJP(c) WG/JD/JG
ACC NR: AP6030983 SOURCE CODE: UR/0181/66/008/009/2816/2818

AUTHOR: Basov, N. G.; Drozhbin, Yu. A.; Zakharov, Yu. P.; Nikitin, V. V.; Semenov, A. S.; Stepanov, B. M.; Tolmachev, A. M.; Yakovlev, V. A.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: The effect of injection current on the temporal characteristics of a GaAs laser

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2816-2818

TOPIC TAGS: solid state laser, semiconductor laser, gallium arsenide laser, injection laser, ELECTRIC CURRENT, INJECTION CURRENT

ABSTRACT: In an investigation of the temporal characteristics of a GaAs laser the radiative delay time (τ_g) was determined as a function of the injection current. Ordinary diodes, prepared by means of the diffusion process, were placed in a dewar at the liquid N temperature. The laser was excited by a current oscillator with pulse amplitudes from 4 to 40 amp and a duration of 40 nanosec. Several diodes were investigated at threshold currents from 1.8 to 4 amp. The dependence of τ_g on injection current indicates that the value of τ_g approaches 1.8×10^{-9} sec. This corresponds approximately to the spontaneous radiative lifetimes for electrons and holes calculated theoretically elsewhere (W. P. Dumke, Phys. Rev., 132, 1998, 1963). With a 16-fold

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L 44603-66

ACC NR: AP6030983

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increase of I_{thr}, τ_g increases to 0.9 nanosec; this is explained by the time increase necessary to achieve population inversion. To eliminate delay due to spontaneous emission and to achieve stimulated emission, the diode was pulsed by currents from an auxilliary oscillator with amplitudes of 1.5 I_{thr} and durations of approximately 200 nanosec. Some 50 nanosec after the onset of the auxilliary pulse, the diode was pulsed by a positive current from the master oscillator. The delay time between the onset of the injection current from the master oscillator and the radiation induced by it was measured, and at 17 I_{thr} was reduced to 6×10^{-11} sec. A further decrease in τ_g calls for considerably increased injection currents. The experimental data indicate that GaAs lasers can be used as radiation modulators in the centimeter band and as high-speed (10^{-10}—10^{-11} sec) optical switches. Orig. art. has: 1 figure. [YK]

SUB CODE: 20/ SUBM DATE: 13Apr66/ ORIG REF: 001/ OTH REF: 002/ ATD PRESS: 5078

Card 2/2

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

ACC NR: AP6022023 SOURCE CODE: UR/0120/66/000/003/0174/0176

AUTHOR: Drozhbin, Yu. A.; Tolmachev, A. M.

ORG: none

TITLE: A generator circuit for sweep and shutting of an electro-optical transducer

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1966, 174-176

TOPIC TAGS: electronic circuit, image converter, optic detection, transducer, photochronograph

ABSTRACT: A circuit used for generation of highly linear voltages and rectangular pulses for sweep and shutter control of high-seppd photochronographs is described. The circuit uses vacuum tubes and is capable of generating bipolar sweep ramp voltages of up to 4 kV and shutter-control pulses with amplitudes of 2 kV. The sweep pulses have fixed time durations of 0.25, 0.5, 1, 1.5, and 2.0 μsec; they are bipolar and linearly rise up to 4 kV with a linearity not worse than ± 1% over the working time interval. The shutter-control pulses have a fast rise time that does not exceed 2% of the total pulse time duration; their tops are flat to within 0.2% of the total pulse amplitude. The circuit was successfully used in a photochronograph equipped with a PIM-3 transducer and a photoamplifier. The dynamic resolution of the set-up did not differ from the static resolution and was about 10 to 15 strokes/mm. Orig. art. has: 1 figure.

SUB CODE: 09, 14/ SUBM DATE: 18Mar65/ ORIG REF: 008/ OTH REF: 002

Card 1/1 UDC: 621.383.6

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, A. V.

Rural dams. Moskva, Gos. izd-vo selkhoz lit-ry, 1949. 93p.

DA

1. Dams. 2. Hydraulic engineering - Russia.

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TOLMACHEV, A.V., inzh. (g.Saratov)

Imundable bridge-dam on the Altata River. Gidr.i mel. 13 no.7:51-54 Jl '61. (MIRA 14:7)

(Altata River--Dams)

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AZIZYAN, A.K.; ANDRIYANOV, B.V.; BARASHEV, P.R.; BUGAYEVA, M.I.; VASIL'YEV, N.I.; DENISOV, N.N.; ZASLAVSKIY, B.Ye.; OSTROUMOV, G.N.; TYUPAYEV, A.S.; ADZHUBEY, A.I., red.; GORYUNOV, D.P., red.; IL'ICHEV, L.F., red.; SATYUKOV, P.A., red.; SIVOLOBOV, M.A., red.; SKURIDIN, G.A., red.; TOLMACHEV, A.V., red.; DANILINA, A.I., tekhn. red.

[Dawn of the outer space era] Utro kosmicheskoi ery. Moskva, Gospolitizdat, 1961. 762 p. ___ [Phonograph record "World flight to the stars. Soviet man in outer space;" report] Gramofonnaia plastinka "Vsemirnyi reis k zvezdam. Sovetskii chelovek v kosmose"; reportazh. (MIRA 14:10)

1. Redaktsiya gazety "Pravda" (for Azizyan, Denisov). 2. Komitet po radioveshchaniyu i televideniyu (for Andriyanov). 3. Redaktsiya gazety "Komsomol'skaya pravda" (for Barashev). 4. Redaktsiya gazety "Sovetskoye foto" (for Bugayev). 5. Redaktsiya gazety "Krasnaya zvezda" (for Vasil'yev). 6. Gosudarstvennoye izdatel'stvo politicheskoy literatury (for Zaslavskiy). 7. Redaktsiya gazety "Izvestiya" (for Ostroumov). 8. Telegrafnoye agenstvo SSSR (for Tyupayev). (Astronautics)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, B.S.

Subject : USSR/Mining AID P - 336

Card : 1/1

Author : Polyanskiy, A. P.

Title : Construction defects of a tightening arrangement packer

Periodical : Neft. Khoz., v. 32, #5, 48, My 1954

Abstract : The author remarks on the comments of B. S. Tolmachev published in the Neft. Khoz., No. 4, 1953 concerning the article by M. A. Zelinskiy and A. N. Shermatov "For a Rational Construction of Equipment for the Bottom and Mouth of Gas Wells", published in the Neft. Khoz., No. 7, 1952. The author considers that the packer, shown on fig. 5, of the reviewed article, has many defects and is unsatisfactory in service.

Institution : None

Submitted : No date

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

KALININ, Ye.P., inzh.; TOLMACHEV, B.V.

Transistorized level indicator. Priborostroenie no.7:23 Jl '65.
(MIRA 18:7)

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Tolmachev, B. V. "Contribution to the Geological Interpretation of Geophysical Data." Razvedka Nedr, Moscow, No. 6, 1940, pp. 55-61.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

FILATOV, F.I.; KOLPASHNIKOV, A.I.; Prinimali uchastiye: POTAPOV, P.I.; YERMILOV, A.M.; TOLMACHEV, B.Ya.; KHARITONOV, A.Ya.

Determination of residual stresses in the brake drums of airplane wheels. Zav.lab. 28 no.2:223-224 '62. (MIRA 15:3)
(Airplane--Brakes) (Strains and stresses)

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TOLMACHEV O., SOKOLOVA, Z.

USSR (600)

Dairying - Voronezh (Province)

Struggle for rhythmic factory work for acceleration of the production cycle
Mol. prom. 13 No 4, 1952

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

TOLMACHEV, G. (TSelinnyy kray, s. Ruzayevka)

Compare with this motortruck. Izobr. i rats. no.7:18-19 Jl '61.
(MIRA 14:6)

(Ruzayevka—Virgin Territory—Grain—Transportation)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756110009-1

AUTHORS Shiryayeva, L.V., Tolmachev, G.M. 89-10-7/36

TITLE The Chemical Behaviour of Mo^{99} Formed on Neutron Irradiation of Uranium Compounds.
(O khimicheskom povedenii Mo^{99}, obrazuyushchegosya pri obluchenii soedineniy urana neytronami.)

PERIODICAL Atomnaya Energiya, 1957, Vol. 3, Nr 10, pp. 318-320 (USSR)

ABSTRACT U_3O_8 and UO_2 (5 g - 50 g were in the course of 1 1/2 hours, heated up to temperatures of from 400 to 1200°C after irradiation with neutrons in oxygen and hydrogen. In this way the yield of Mo^{99} was measured. For U_3O_8 the yield of Mo^{99} depends mainly upon the annealing temperature but not upon the nature of the gas. The transformation of U_3O_8 into UO_2 has no influence upon the Mo yield on the occasion of the heating of U_3O_8 in hydrogen. During heating of U_3O_8 in oxygen (t = 1200°C) about 15 % Mo^{99} evaporate. In the case of hydrogen annealing no Mo^{99} evaporation was observed in the total temperature domain.

CARD 1/2 If UO_2 is annealed in hydrogen, the Mo^{99} yield grows at

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The Chemical Behavior of Mo-99 Formed on Neutron Irradiation of Uranium Compounds.

higher temperatures and attains 11 % at 1200°C. In the case of annealing in oxygen, however, the Mo^{99} yield at 1000°C attains a maximum of 83,5 %. In the case of still higher temperatures evaporation already takes place. At 1200° C 40 % of the total Mo^{99} evaporates. If this sample is then treated with certain liquids, further 57 % evaporate. It does not seem wrong to assume that a certain part of Mo^{99} is produced in form of MoO_3 on the occasion of fission.

There are 2 figures and 1 table.

ASSOCIATION: None given.
SUBMITTED: April 18, 1957.
AVAILABLE: Library of Congress.

CARD 2/2

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